Abstract

A flat metal plate (20) has a plurality of holes (50) that have a property that changes across the surface of the plate so that the flat plate (20) mimics the behavior of a curved wavefront transformer. The changing property can include a dimension, such as radius or depth, such that the holes (50) near the center of the plate (20) are smaller, for example, than the holes (50) further away from the center of the plate (20). The size of each hole (50) is a function of the local phase change imparted on an electromagnetic wave of a particular wavelength or frequency that hits the hole (50), plus the propagation phase change that occurs in the reflected wave exiting the hole (50) as it travels the distance between the hole (50) and the focal point.